ABSTRACT OF THE DISCLOSURE

A spectral reflectance sensor including: a light source for emitting a modulated beam of red light; a light source for emitting a modulated beam of near infrared light; a receiver for receiving reflected light produced by either the red source or the near infrared source; a receiver for receiving incident light from either the red source or the infrared source; a signal conditioner responsive to the modulation such that the signals produced by the receivers in response to reflected and incident light from the source can be discriminated from signals produced by ambient light; and a microprocessor having an input such that the microprocessor can determine the intensities of incident red light, reflected red light; incident near infrared light; and reflected near infrared light. From these intensities, and by knowing the growing days since emergence or planting, the sensor can calculate the mid-growing season nitrogen fertilizer requirements of a plant.

100622.1